

**APPLICATION**  
**FOR**  
**UNITED STATES LETTERS PATENT**

**TITLE:           METHOD FOR RECORDING AN AUDIO BROADCAST  
                    BY USER PREFERENCE**

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**22511**

PATENT TRADEMARK OFFICE

"EXPRESS MAIL" Mailing Label Number: EL656799702US

Date of Deposit: August 2, 2001

# **METHOD FOR RECORDING AN AUDIO BROADCAST BY USER PREFERENCE**

## **Background of Invention**

### **Field of the Invention**

[0001] The invention relates generally to recording of audio broadcasts.

### **Background Art**

[0002] Audio broadcast media has significant advantages in providing information and entertainment to a listener. One such benefit is the novelty of its content. An audio broadcast may vary its content from day to day and even minute to minute. For example, songs, programs, and interviews will change daily while breaking news stories will change continuously.

[0003] Unfortunately, if a user is not listening in at the time of the broadcast, he or she will miss the content of interest. A prior art method of solving this problem involves pre-recording a scheduled broadcast for later playback. However, this requires the user to be aware of the time of the broadcast prior to its occurrence and to schedule the recording. Without such prior knowledge of the schedule, any such recording would contain a good deal of unwanted content. A solution is needed that allows for recording of broadcast material based on a user's preferences that can be played back at a later time.

## **Summary of Invention**

[0004] In some aspects, the invention relates to a method for recording an audio broadcast by user preference, comprising: recording an audio broadcast;

converting the audio broadcast to a text media; searching the text media for a designated user preference; and saving the audio broadcast when the designated user preference is found in the text media.

[0005] In other aspects, the invention relates to an apparatus for recording an audio broadcast by user preference, comprising: means for recording an audio broadcast; means for mining the audio broadcast for a designated user preference; and means for saving the audio broadcast when the designated user preference is found in the audio broadcast.

[0006] In other aspects, the invention relates to an apparatus for recording an audio broadcast by user preference, comprising: a recorder that records an audio broadcast; an audio miner that converts the audio broadcast to a text media; a search engine that searches the text media for a designated user preference; and a storage media that saves the audio broadcast when the designated user preference is found in the audio broadcast.

[0007] Other aspects and advantages of the invention will be apparent from the following description and the appended claims.

### **Brief Description of Drawings**

[0008] Figure 1 shows a flowchart outlining one embodiment of the present invention.

[0009] Figure 2a and 2b show a control panel layout in accordance with one embodiment of the present invention.

[0010] Figure 3 shows a layout of a control panel in accordance with one embodiment of the present invention.

## Detailed Description

[0010] Exemplary embodiments of the invention will be described with reference to the accompanying drawings. Like items in the drawings are shown with the same reference numbers.

[0011] An audio receiver has been developed that uses audio mining techniques to record audio material for later playback by the user. The selected audio material is recorded according to the user's preferences. Figure 1 shows a flowchart 10 outlining one embodiment of the present invention. First, a radio audio broadcast 12 is recorded to a storage media 14. It may be recorded using digital recording techniques that are known to those of ordinary skill in the art. The recording is assembled into a collection of audio files 16 along with other recorded audio broadcasts which may be from other media sources such as the internet 18. The audio files 16 are converted to text files 22b using audio mining techniques 20. The audio mining techniques include the use of voice recognition techniques that are known to those of ordinary skill in the art. A copy of the audio portion of the file 22a is also kept.

[0012] A search agent or "search engine" searches the text file 26 for key words or "hits" 28 that the user has specified to be of interest. If a hit is found, the file is assigned to the appropriate user's play list 30. The audio portion of the file 22a is distributed 36 to either an audio player in a car 32 or a home computer 34 according to the user preference agent 24. The program can then be recalled from the play list by the user and a specific track selected within the program for playing. An individual track may vary in length. The track may be a recording of such broadcasts as: a song, an advertisement, a news story, traffic or weather information, an emergency bulletin, an interview, a sporting event, or even an entire broadcast program. The type and quantity of content that is recorded is only limited by the memory space available.

[0013] Figures 2a and 2b show examples of a user preference agent interface 38, 40, and 42 in accordance with alternative embodiments of the present invention. The first interface 38 illustrates a general topic user preference. In this example, the user has instructed the invention to search for material on “rugby” in any program. The second interface 40 illustrates a topic user preference directed towards a specific program on a specific station. In this example, the user has instructed the invention to search for material on “rugby” on Station A during Program 1. The third interface 42 illustrates a user preference directed towards a specific program on a specific station. In this example, the user has instructed the invention to record Station B during Program 2. These examples are by no means exhaustive. It is fully intended that the user is given the option of narrowing or broadening their preferences as desired.

[0014] Figure 3 shows a layout of a control panel 50 in accordance with one embodiment of the present invention. The control panel 50 includes an LCD 52 or other suitable type display screen that shows current information such as: the key search terms of a program; the individual track within a program; the position within a track; etc. The device of this embodiment is turned on/off and the volume is adjusted with a single knob 54 that controls both functions. In this embodiment, there are six preset buttons 56a-f that go directly to a specific preset program. A select control button 58 is available to navigate through all available programs. Also included are several control buttons that control the playing of individual tracks. These control buttons include: a play/pause button 60; a “go to previous track” button 62; a “go to next track” button 64; a review rocker 66; and a fast forward rocker 68. The rockers advance the track a few seconds when they are pressed. In contrast, the track buttons go to or return to the beginning of the adjacent track. Finally, a memo button 70 is used to initiate the recording of some audio presently in progress, or it can be used to mark a current track for later reference.

[0015] While the invention has generally been directed towards recording audio broadcasts over the radio, broadcasts from other types of media sources could be recorded as well including: internet streaming audio or video; compact discs (CDs); cassette tapes; digital versatile discs (DVDs); etc. Additionally, in some embodiments the invention may be installed in a automobile or in alternative embodiments it may be used as a portable device.

[0016] While the invention has been described with respect to a limited number of embodiments, those skilled in the art, having benefit of this disclosure, will appreciate that other embodiments can be devised which do not depart from the scope of the invention as disclosed herein. Accordingly, the scope of the invention should be limited only by the attached claims.